Optimizing water quality monitoring stations using genetic algorithms

Al-Zahrani, M.A. , Moied, K.

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Abstract: Monitoring of drinking water transported by a water distribution network is an essential step to ensure the safeguard of human health and the compliance of drinking water quality with local and international standards. The Safe Drinking Water Act requires that water quality in a water distribution network be sampled at locations which are representative of the whole network system. Different tools based on optimization techniques can be employed for identifying water quality monitoring stations in a water distribution network. In this paper, a Genetic Algorithm (GA) is applied for this purpose. The steps involved in the developed methodology are presented with an application on hypothetical networks. Then its validity was tested against two cases presented in the literature and gave similar results